

A MOST IMPORTANT METROLOGICAL WORK:

THE PRODUCTION OF PLATINUM RESISTANCE THERMOMETERS

D. V. Gogberidze

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A MOST IMPORTANT METROLOGICAL WORK:

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Professor D. V. Gogoberidze

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Recently the Institute of Physical Problems produced for the Moscow State Institute of Measures a number of platinum resistance thermometers which should serve as a group standard of resistance. [1]. The standard resistance thermometers consist of a spiral of a rather pure platinum, coiled on suitable frames. In the work referred to, a quartz frame was chosen, produced from a quartz plate twisted by a screw. Its design was prepared by P. G. Strelkov [3] and has already been applied several times.

The spirals were produced from spectrally pure platinum.

Usually as a method for controlling platinum quality for resistance thermometers the following ratio is used:

$$\frac{\text{resistance at } 100^{\circ} \text{ C}}{\text{resistance at } 0^{\circ} \text{ C}}$$

which should be above 1.391. The maximum value of this ratio known for the purest platinum equals 1.3925. For the platinum used in the work referred to the ratio was between 1.39248 and 1.39237; it is close enough to the limit value.

The standardization of the described thermometers was carried out in boiling sulphur vapors, in melting ice prepared from distilled water, in boiling liquid oxygen in special equipment, prepared in advance (previously described by Strelkov and Lin'kov).

As a result of the described work the Moscow Institute of Measures and Measuring Equipment possesses nowadays platinum resistance thermometers

-1-

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numbered in the tens and representing a temperature standard nearly the best in the world.

BIBLIOGRAPHY

- (1) N. A. Brilliantov, V. P. Strelkov and V. P. Lin'kov, Zhurnal Tekh Fiz, XX, 3, (1950).
- (2) N. A. Brilliantov. Zhurnal Tekh Fiz, XVIII, (1948). *[sic. Not referred to in the original.]*
- (3) P. G. Strelkov, Zavodsk Labor., 8, pp 477 and 1097, (1939).

-2-

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